

## WEST Search History

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*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR*

L3 carotenoid and (molecular or colloid\$ adj3 solution) and lactose and  
soybean adj5 protein

18

L3

L2 carotenoid and colloid\$ and lactose and soybean adj5 protein

13

L2

L1 carotenoid same colloid\$ same lactose and soybean adj5 protein

2

L1

END OF SEARCH HISTORY

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L2: Entry 12 of 13

File: USPT

Oct 3, 1995

DOCUMENT-IDENTIFIER: US 5455235 A

TITLE: Food composition for inhibiting the formation of an intestinal putrefactive product

Brief Summary Text (12):

There may be used such a substance which is produced by a conventional producing method. Examples of the conventional producing method include (1) a method discussed in Japanese Patent Publication No. 57-58905 in which, for example, levan sucrase originating from genus Aerobacter, is acted on a solution of sucrose and lactose, (ii) a method discussed in Japanese Patent Unexamined Publication No. 64-85090 in which an extract of cells from the specific genus sporobolomyces, are used, and (iii) a method discussed in Japanese Patent Unexamined Publication No. 2-35095 in which germs of the genus Rohnella are used. In the present invention, lactosucrose produced by any of these methods may be used as it is, or as refined by column chromatography.

Brief Summary Text (34):

The food composition of the present invention may also be used as a healthful drink composition containing, as effective components, lactosucrose, polydextrose and carotenoid. More specifically, such a healthful drink composition contains 0.5 to 10 g of lactosucrose, 1 to 20 g of polydextrose and 0.5 to 30 mg of carotenoid, for 100 ml of the healthful drink composition.

Brief Summary Text (36):

When such a healthful drink composition is drunk, both carotenoid and polydextrose can be ingested. This not only provides improvements in eating habits which are liable to be irregular, and in health conditions, but also prevents fatness, an outbreak of diseases of adult people and the like. This also eliminates a danger of the production of a cancer and provides immunity invigoration. Further, this is effective in prevention of ultraviolet rays and in improvements in constipation. Further, the presence of lactosucrose lowers the amount of an intestinal putrefactive product to be formed. This is further effective in prevention of the production of a cancer and in reinforcement of the immunological system. Also, such a healthful drink composition is fully satisfactory in view of taste, odor and dietary feeling.

Brief Summary Text (38):

As the carotenoid, there may be used any of a variety of substances known in the fields of food, medical and pharmaceutical products, and the like. There may be used carotenoid obtained by refining natural substances (palm carotene, dunalella carotene and the like), and synthetic substances thereof. Further, there may be used, as it is, powder or extract of any of plants and animals containing, singly or in combination, carotenoids such as .alpha.-, .beta.- and .UPSILON.-carotene, lycopene, lutein, canthaxanthin and the like. Of these, .beta.-carotene is more preferable.

Brief Summary Text (39):

The carotenoid may be blended in an amount of 0.5 to 30 mg, preferably 1 to 10 mg, with 100 ml of the drink composition. If the blending amount of carotenoid exceeds the range above-mentioned, this disadvantageously deteriorates the flavor and lowers the dispersion and solubility of carotenoid.

Brief Summary Text (40):

Carotenoid is oil-soluble. Accordingly, it is required to use oil (edible oil material) for dissolving carotenoid, and an emulsifier for emulsifying the same. As these oil and emulsifier, there may be used any of oils and emulsifiers conventionally used in a variety of foods without particular restrictions imposed therein. Specific examples of the oil include soybean oil, rapeseed oil, rice oil, cotton seed oil, safflower oil, sesame oil, corn oil, peanut oil, sunflower oil, palm oil and the like. Examples of the emulsifier include polyglycerol esters of fatty acids, glycerol esters of fatty acids, propylene glycol of fatty acids, sucrose of fatty acids, soybean phospholipid and the like.

Brief Summary Text (43):

As far as the healthful drink composition of the present invention contains, as effective components, lactosucrose, polydextrose and carotenoid, no restrictions are imposed on other components to be added. Thus, a variety of sweetening agents and glucides may be blended as done in a usual drink composition. Examples of the glucide include (i) a variety of saccharides including a monosaccharide such as glucose, fructose and the like, and a disaccharide such as maltose, sucrose and the like, (ii) polysaccharide such as dextrin, cyclodextrin and the like, and (iii) sugar alcohols such as xylitol, sorbitol, erythritol and the like. As the sweeteners, there may be advantageously used, in addition to the glucides above-mentioned, natural sweeteners (thaumatin, an extract of stevia (ribaudioside A or the like), a glycyrrhizin and the like), and synthetic sweeteners (saccharin, aspartame and the like). These glucides may be generally blended in an amount of about 1 to about 15 g, preferably about 3 to about 12 g, with 100 ml of the drink composition.

Brief Summary Text (44):

Further, the healthful drink composition of the present invention may suitably contain a variety of nutritive elements, vitamins, minerals (electrolytes), synthetic and natural flavors, coloring agents, flavor materials (cheese, chocolate and the like), pectinic acid and the salts thereof, alginic acids and the salts thereof, organic acids, thickening agents serving as protective colloid substances, pH adjusting agents, stabilizing agents, preservatives, glycerols, alcohols, effervescent ingredients for carbonic drinks and the like. To make the healthful drink composition in the form of a fruit-juice drink or vegetable drink, natural fruit juices or fruit fractions may be added singly or in combination. Each of these additives is not limited in amount, but may be generally added in an amount of 0 to 20 parts by weight for 100 parts by weight of the drink composition.

Brief Summary Text (47):

The healthful drink composition of the present invention may be prepared by simultaneously mixing the components above-mentioned, but is preferably prepared by previously dissolving carotenoid in oil, preparing an aqueous solution containing the carotenoid thus dissolved, polydextrose and other additives, and emulsifying the aqueous solution with the use of an emulsifier. More specifically, a solution in which carotenoid has been dissolved in oil, is added to a mixture liquid containing water and a suitable emulsifier, and the resulting mixture is emulsified. Then, the resulting emulsion is mixed with an aqueous solution containing polydextrose and other additives, thus preparing the healthful drink composition of the present invention.

Detailed Description Text (6):

As raw materials, sucrose and lactose were mixed to prepare a mixture, on which S-fructofranosidase was acted. Through respective steps of decoloration, desalinization, filtration and drying, there was prepared a powder preparation containing 59.0% by weight of lactosucrose (hereinafter referred to as LS55P). The LS55P contained 59.0% by weight of lactosucrose, 22.7% by weight of lactose, 8.4% by weight of sucrose, 1.6% by weight of fructose, 0.8% by weight of glucose, 6.8% by weight of other sugar, and 0.8% by weight of water.

Detailed Description Paragraph Table (11):

TABLE 6

Example No.	34	35	36	37	38	39	40	41	42	43		Protein
Components (g)	Casein	3.3	4.5	--	--	--	--	--	--	--	Sodium caseinate	-- 2.2 2.6

3.3 4.0 2.9 2.6 3.2 3.3 Calcium caseinate -- -- 1.1 0.6 -- -- -- -- -- Casein  
decomposed -- -- 0.7 2.2 -- 0.6 0.4 1.2 -- -- by enzyme Soybean protein -- -- 0.2 --  
0.5 0.2 -- -- 0.3 -- decomposed by enzyme Gelatin decomposed 2.5 3.1 2.0 -- 2.2 2.6  
2.1 -- 2.0 2.1 by enzyme Glucide Component (g) LS55P (g) 15 10 8 10 15 12 15 12 12  
10 LS75P 1.5 2 -- -- 4 -- 3 -- -- 2 Lipid Component (g) Soybean oil 2.0 -- -- -- --  
2.4 -- -- 2.3 -- Rice oil -- 2.3 -- 1.2 -- 1.0 1.0 2.0 -- -- Cottonseed oil -- --  
2.2 -- 1.5 -- -- -- 1.7 Peanut oil -- -- -- 1.0 -- -- -- Macadamia nut  
oil 0.2 -- -- -- 0.6 -- 0.7 -- -- -- Other Components Vitamins Suitable quantity  
Minerals Suitable quantity Flavor Suitable quantity

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L2: Entry 11 of 13

File: USPT

Jun 29, 1999

DOCUMENT-IDENTIFIER: US 5916591 A

TITLE: Soft gelatin capsules

Brief Summary Text (3):

In general, liquid or semisolid filling materials are encapsulated in the production of soft gelatin capsules. If the active ingredients are in solid form, they must be dissolved or suspended in a suitable liquid vehicle or be converted into a paste using thickeners. In many cases, the active ingredients, such as solid, water-insoluble active ingredients, especially retinoids, carotenoids or vitamins, have insufficient solubility in the liquid vehicles which can be used for these purposes. Dispersions therefore result, and the active ingredients readily sediment in these so that the dispersions can no longer be pumped. Moreover the pastes produced with thickeners have the disadvantage of lack of pumpability.

Brief Summary Text (10):

The powdered product preferably comprises a colloid beside the solid, water-insoluble active ingredient with the stated particle size distribution. The production of such powdered products is known per se and is described, for example, in EP-B 065 193, to which express reference is made. Colloids which can be present are swellable colloids such as gelatin, starch, dextrin, pectin, gum arabic, casein, caseinate, soybean protein or mixtures thereof. However, it is also possible to use polyvinyl alcohol, polyvinylpyrrolidone, methylcellulose, carboxymethylcellulose, hydroxypropylcellulose and alginates. For further details, reference is made to R. A. Morton, Fat Soluble Vitamins, intern. Encyclopedia of Food and Nutrition, Volume 9, Pergamon Press 1970, pages 128 to 131. To increase the mechanical stability of the powdered product, it is expedient to add to the colloid a plasticizer such as sugar or sugar alcohols, eg. sucrose, glucose, lactose, invert sugar, sorbitol, mannitol or glycerol. The ratio of colloid to active ingredient and plasticizer is generally chosen so that the resulting powdered product contains 0.5-25% by weight, preferably 1-20% by weight, of the active ingredient, 10-50% by weight of the colloid and 20-70% by weight of the plasticizer, based on the dry weight of the powder.

Brief Summary Text (12):

A particularly suitable colloid has proven to be a soybean protein/carbohydrate or a gelatin/carbohydrate matrix in which the solid active ingredient is embedded. If the solid active ingredient is a retinoid, carotenoid or vitamin, the powdered product forms a fine-particle dispersion, for example in cold water.

Brief Summary Text (13):

The carotenoids which can be present in the soft gelatin capsules are the known, available, natural or synthetic representatives of this class of compounds, which can also be used as coloring agents, eg. carotene, lycopene, bixin, zeaxanthin, cryptoxanthin, citranaxanthin, lutein, canthaxanthin, astaxanthin, .beta.-apo-4'-carotenal, .beta.-apo-8'-carotenal, .beta.-apo-12'-carotenal, .beta.-apo-8'-carotenoic acid and esters of hydroxyl- and carboxyl-containing representatives of this group, eg. the lower alkyl esters and, preferably, the methyl and ethyl esters. The representatives which are readily obtainable industrially are particularly preferred, such as .beta.-carotene, canthaxanthin, .beta.-apo-8'-carotenal and .beta.-apo-8'-carotenoic esters. Soft gelatin capsules which contain .beta.-carotene as active ingredient in the powdered product are very particularly preferred.

Brief Summary Text (17):

Besides the powdered products, the soft gelatin capsules can also contain other active ingredients, eg. from said groups of carotenoids, retinoids and/or vitamins, the substances detailed above, especially vitamin C and/or E, in conventional formulation.

Brief Summary Text (20):

The invention therefore also relates to the use of powdered retinoid, carotenoid and/or vitamin products with a particle size distribution as stated above for the production of soft gelatin capsules.

## CLAIMS:

3. A soft gelatin capsule as claimed in claim 1, wherein the powdered product contains the water-insoluble active ingredient(s) and a colloid.
4. A soft gelatin capsule as claimed in claim 1, wherein the water-insoluble active ingredient(s) is (are) selected from the group consisting of retinoids, carotenoids and/or vitamins.
5. A soft gelatin capsule as claimed in claim 3, wherein the colloid is a gelatin/carbohydrate matrix.
6. A soft gelatin capsule as claimed in claim 4, wherein the carotenoid is .beta.-carotene.
8. The use of powdered retinoid, carotenoid and/or vitamin products with a particle size distribution as claimed in claim 1 for the production of soft gelatin capsules.

**PALM INTRANET**Day : Monday  
Date: 8/4/2003  
Time: 10:13:39**Inventor Name Search Result**

Your Search was:

Last Name = RUNGE

First Name = FRANK

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>10234168</u>	Not Issued	071	09/05/2002	CAROTENOID FORMULATIONS, COMPRISING A MIXTURE OF BETA-CAROTENE, LYCOPENE AND LUTEIN	RUNGE, FRANK
<u>10221203</u>	Not Issued	020	11/18/2002	METHOD OF PRODUCING OILY SUSPENSIONS OF WATER-SOLUBLE VITAMINS	RUNGE, FRANK
<u>10058022</u>	Not Issued	030	01/29/2002	PROCESS FOR PRODUCING DRY POWDERS OF ONE OR MORE CAROTENIDS	RUNGE, FRANK
<u>10015560</u>	Not Issued	093	12/17/2001	PRODUCTION OF DRY POWDERS OF ONE OR MORE OXYGENATED CAROTENIDS	RUNGE, FRANK
<u>09988109</u>	Not Issued	071	11/19/2001	PRODUCTION OF SOLID PREPARATIONS OF WATER-SOLUBLE, SPARINGLY WATER-SOLUBLE OR WATER-INSOLUBLE ACTIVE COMPOUNDS	RUNGE, FRANK
<u>09929075</u>	Not Issued	041	08/15/2001	SOLID PREPARATIONS HAVING A MULTICORE STRUCTURE	RUNGE, FRANK
<u>09811431</u>	<u>6509029</u>	150	03/20/2001	CAROTENOID FORMULATIONS, COMPRISING A MIXTURE OF BETA-CAROTENE,	RUNGE, FRANK

				LYCOPENE AND LUTEIN	
<u>09713837</u>	Not Issued	161	11/16/2000	STABLE, PULVERULENT LYCOPENE FORMULATIONS COMPRISING LYCOPENE HAVING A DEGREE OF CRYSTALLINITY OF GREATER THAN 20%	RUNGE, FRANK
<u>09685743</u>	Not Issued	161	10/11/2000	STABILIZING LIQUID AQUEOUS. PREPARATIONS OF FAT SOLUBLE SUBSTANCES	RUNGE, FRANK
<u>09673136</u>	Not Issued	071	10/11/2000	DRIED MICROORGANISM CULTURES AND METHOD FOR PRODUCING SAME	RUNGE, FRANK
<u>09395772</u>	<u>6235315</u>	150	09/14/1999	STABLE, PULVERULENT LYCOPENE FORMULATIONS, COMPRISING LYCOPENE HAVING A DEGREE OF CRYSTALLINITY OF GREATER THAN 20%	RUNGE, FRANK
<u>09382772</u>	<u>6261598</u>	150	08/25/1999	CAROTENOID FORMULATIONS, COMPRISING A MIXTURE OF B-CAROTENE, LYCOPENE AND LUTEIN	RUNGE, FRANK
<u>09284258</u>	<u>6458745</u>	150	04/09/1999	SOLID PHYTOSANITARY AGENT	RUNGE, FRANK
<u>09092969</u>	<u>5982485</u>	150	06/08/1998	DETRMINATION OF INTERFACE ADSORPTION	RUNGE, FRANK
<u>09004341</u>	<u>5940177</u>	150	01/08/1998	METHOD AND APPARATUS FOR DETERMINING THE SIZE DISTRIBUTION OF DIFFERENT TYPES OF PARTICLES IN A SAMPLE	RUNGE, FRANK
<u>08989135</u>	<u>6287615</u>	150	12/11/1997	USE OF SOLUBILIZED CAROTENOID PREPARATIONS FOR	RUNGE, FRANK



				COLORING FOOD	
<u>08813978</u>	<u>5891907</u>	150	03/10/1997	STABLE AQUEOUS SOLUBILIZATES OF CAROTENOIDS AND VITAMINS	RUNGE , FRANK
<u>06898598</u>	<u>4730236</u>	150	08/21/1986	PROCESS FOR ENCAPSULATING A SENSITIVE COMPONENT IN A PROTECTIVE HOUSING AND ARTICLE	RUNGE-ESCHEN , FRANK

Inventor Search Completed: No Records to Display.

	<b>Last Name</b>	<b>First Name</b>
<b>Search Another: Inventor</b>	<input type="text" value="RUNGE"/>	<input type="text" value="FRANK"/>
	<input type="button" value="Search"/>	

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Time: 10:13:45

# **PALM INTRANET**

## Inventor Name Search Result

Your Search was:

Last Name = LUDDECKE

First Name = ERIK

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>10058022</u>	Not Issued	030	01/29/2002	PROCESS FOR PRODUCING DRY POWDERS OF ONE OR MORE CAROTENOIDS	LUDDECKE, ERIK
<u>10015560</u>	Not Issued	093	12/17/2001	PRODUCTION OF DRY POWDERS OF ONE OR MORE OXYGENATED CAROTENOIDS	LUDDECKE, ERIK
<u>09988109</u>	Not Issued	071	11/19/2001	PRODUCTION OF SOLID PREPARATIONS OF WATER-SOLUBLE, SPARINGLY WATER-SOLUBLE OR WATER-INSOLUBLE ACTIVE COMPOUNDS	LUDDECKE, ERIK
<u>09959351</u>	Not Issued	018	01/01/0001	STABLE, AQUEOUS DISPERSIONS AND STABLE, WATER-DISPERSIBLE DRY POWDERS OF XANTHOPHYLLS, AND PRODUCTION AND USE OF THE SAME	LUDDECKE, ERIK
<u>09929075</u>	Not Issued	041	08/15/2001	SOLID PREPARATIONS HAVING A MULTICORE STRUCTURE	LUDDECKE, ERIK
<u>09459723</u>	<u>6375873</u>	150	12/13/1999	PROCESS AND APPARATUS FOR PRODUCING STABLY FINE-PARTICLE POWDERS	LUDDECKE, ERIK
<u>09388199</u>	Not Issued	123	09/01/1999	ACTIVE INGREDIENT PREPARATIONS AND A PROCESS FOR THE PRODUCTION THEREOF	LUDDECKE, ERIK
<u>09319600</u>	<u>6296877</u>	150	06/08/1999	STABLE, AQUEOUS DISPERSIONS AND STABLE, WATER-DISPERSIBLE DRY XANTHOPHYLL POWDER,	LUDDECKE, ERIK

				THEIR PRODUCTION AND USE	
<u>09226143</u>	Not Issued	124	01/07/1999	USE OF CAROTENOID AGGREGATES AS COLORANTS	LUDDECKE , ERIK
<u>08972392</u>	<u>5863953</u>	150	11/18/1997	LIQUID, OIL-MISCIBLE CAROTENOID PREPARATIONS	LUDDECKE , ERIK

Inventor Search Completed: No Records to Display.

**Search Another:  
Inventor**

**Last Name**

LUDDECKE

**First Name**

ERIK

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**PALM INTRANET**Day : Monday  
Date: 8/4/2003  
Time: 10:13:50**Inventor Name Search Result**

Your Search was:

Last Name = PFEIFFER

First Name = ANGELIKA-MARIA

Application#	Patent#	Status	Date Filed	Title	Inventor Name
<u>10058022</u>	Not Issued	030	01/29/2002	PROCESS FOR PRODUCING DRY POWDERS OF ONE OR MORE CAROTENOIDS	PFEIFFER, ANGELIKA-MARIA
<u>10015560</u>	Not Issued	093	12/17/2001	PRODUCTION OF DRY POWDERS OF ONE OR MORE OXYGENATED CAROTENOIDS	PFEIFFER, ANGELIKA-MARIA
<u>09988109</u>	Not Issued	071	11/19/2001	PRODUCTION OF SOLID PREPARATIONS OF WATER-SOLUBLE, SPARINGLY WATER-SOLUBLE OR WATER-INSOLUBLE ACTIVE COMPOUNDS	PFEIFFER, ANGELIKA-MARIA
<u>08972392</u>	<u>5863953</u>	150	11/18/1997	LIQUID, OIL-MISCIBLE CAROTENOID PREPARATIONS	PFEIFFER, ANGELIKA-MARIA

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PFEIFFER

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